What is claimed is:

1. A method of uniformly dispensing pressurized fluid in a fluid path containing a pair of alternately filling and dispensing piston pump cylinders adapted alternately to dispense the fluid through a common dispensing outlet, that comprises, controlling the dispensing of fluid from one pump cylinder to the outlet at a predetermined dispensing pressure and predetermined dispensing rate; as the fluid in said one pump is emptying, decelerating its dispensing rate; during such decelerating, accelerating the dispensing to the outlet of the fluid filled in the other pump cylinder; controlling the decelerating in the said one pump cylinder and the accelerating in the other so as to maintain constancy of said predetermined fluid dispensing rate at the outlet, including during the transition of dispensing from said one to said other pump cylinder; and refilling the fluid in the said one pump cylinder during the dispensing by said other pump cylinder.

2. The method of claim 1 wherein said controlling is effected by microprocessor controls responding to continual sensing of the fluid pressure from each of the cylinders.

3. The method of claim 2 wherein said controlling is further effected through microprocessor-controlled encoded step motors controlling the piston pumps alternately to decelerate and accelerate the respective fluid dispensing therein, with combined speeds equal to the desired dispensing rate, thereby assuring that the pressure throughout the fluid path remains constant at said predetermined rate.

4. A method of continuously and uniformly dispensing pressurized fluids, such as viscous fluids, from a common dispensing outlet fed from a dispensing system comprising a pair of alternately filling and emptying fluid-dispensing pumps, each connected to the dispensing outlet, that comprises, slowing the dispensing from the

emptying pump while accelerating the dispensing from the filled pump to switchover thereto; refilling the emptied pump during the switched over dispensing of the other pump; and maintaining a constant system pressure during the switchover of the dispensing from one pump to the other to insure a predetermined constant dispensing rate at said outlet.

5. The method of claim 4 wherein the dispensing pumps are positive displacement piston pumps driven by microprocessor-controlled respective step motors, each piston being driven independently by closed-loop step motor control to achieve accurate dispensing and verify performance.

6. The method of claim 5 wherein said slowing and accelerating of the respective pump dispensing to said common outlet is effected by respective microprocessor-control of respective valves responsive to the continual sensing of pump fluid pressure and of fluid filling therein.

7. The method of claim 6 wherein said valves have multiple-way valving operation comprising a Fill position, wherein the refilling of the empty pump is started; a Dispense position wherein the emptying pump dispensing is decelerated by its step motor, while the filled pumps dispensing starts to accelerate under the action of its step motor; and a Partial position, wherein the filled pumps is first just exposed to the dispensing pressure and, if the same, then opens to the Dispense position.

8. The method of claim 7 wherein the complete filling of the re-filled pump is sensed to notify the microprocessor to stop refilling.

9. The method of claim 7 wherein the total combined speed of acceleration and deceleration at any point in time is controlled exactly to equal the programmed

predetermined dispensing rate, with the step motor driving the switched-over pump reaching full dispensing speed, and the step motor of the emptied pump reaching zero dispensing speed.

10. The method of claim 9 wherein the multiple-way valving operation is controlled by further step-motor control of the valve position, with valve position sensing and with microprocessor-controlled driving of said further step-motor control.

11. Apparatus for uniformly dispensing pressurized fluid in a fluid path containing a pair of piston pump cylinders adapted alternately to dispense the fluid filled therein through a common dispensing outlet, that comprises, a fluid supply for initially fluid-filling both pump cylinders; means for controlling the dispensing of fluid from one pump cylinder to the outlet at a predetermined dispensing pressure and predetermined dispensing rate; means operable as the fluid in said one pump is emptying, for decelerating its dispensing rate; means operable during such accelerating for accelerating the dispensing of the fluid filled in the other pump cylinder to the outlet; means for controlling the deceleration in the said one pump cylinder and the acceleration in the other, so as to maintain constancy of said predetermined fluid dispensing rate at the outlet, including during the transition of dispensing from said one to said other cylinder to assure constancy of the predetermined rate of dispensing at said outlet; and means for refilling the fluid in the said one pump cylinder from said supply during the continued dispensing by said other pump cylinder.

12. The apparatus of claim 11 wherein said controlling means includes microprocessor controls responding to continual sensing of the fluid pressure from each of the cylinders.

13. The apparatus of claim 12 wherein said controlling is further effected through microprocessor-control encoded step motors controlling the piston pumps alternately to

decelerate and accelerate the respective fluid dispensing therein with combined speeds equal to the desired dispensing rate, thereby assuring that the pressure throughout said fluid path remains constant and the fluid-dispensing rate at said outlet remains constant at said desired rate.

14. Apparatus for continuously and uniformly dispensing pressurized fluids, such as viscous fluids, from a common dispensing outlet in a dispensing system comprising a pair of alternately filling and emptying fluid-dispensing pumps, each connected to the dispensing outlet, the apparatus having, in combination, means for slowing the fluid dispensing from the emptying pump while accelerating the dispensing from the filled pump to switch over thereto; means for refilling the empty pump during the dispensing of the other pump; and means for maintaining a constant system pressure during the switchover of the dispensing from one pump to the other, to insure a predetermined constant dispensing rate at said outlet.

15. The apparatus of claim 14 wherein the dispensing pumps are positive displacement piston pumps driven by microprocessor-controlled respective step motors, each piston being driven independently by a closed-loop step motor control to achieve accurate dispensing and to verify performance.

16. The apparatus of claim 15 wherein the slowing and accelerating of the respective pump dispensing at the said outlet is effected by respective microprocessor-control of respective values responsive to the continual sensing of pump pressure and of fluid filling therein.

17. The apparatus of claim 16 wherein said valves have multiple-way valving operation comprising a Fill position, wherein the refilling of the emptied pump is started; a

Dispense position, wherein the emptying pump dispensing is decelerated by its step motor, while the filled pump dispensing starts to accelerate under the action of its step motor; and a Partial position, wherein the filled pump is first just exposed to the dispensing pressure and, if the same, the valve then opens for the Dispense position.

18. The apparatus of claim 17 wherein sensing means is provided for sensing complete filling of the re-filled pump and notifying the microprocessor to stop refilling.

19. The apparatus of claim 17 wherein means is provided for controlling the total combined speed of acceleration and deceleration at any point in time to be exactly equal to the programmed predetermined dispensing rate, with the step motor driving the switched-over pump reaching full dispensing speed, and the step motor of the emptied pump reaching zero dispensing speed.

20. The apparatus of claim 19 wherein the multiple-way valving operation is controlled by further step-motor control of the valve position, with valve position sensing and with microprocessor-controlled driving of said further step-motor control.